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PRODUCTION COSTS ON PASTURE REDUCED

In Indiana, Purdue researchers produced beef for just over 5 cents a pound from birdsfoot trefoil-bluegrass pasture, while it cost just under 12 cents to produce a pound of beef from bluegrass alone, even though the bluegrass received 120 pounds of nitrogen. Both pastures received 300 pounds of 0-20-10 per acre annually. These are 5-year average figures, too.

The Indiana people find that faulty inoculation and competition of weeds or the companion crop often cause early failure of trefoil. To insure inoculation, they suggest that the grower make certain he is getting genuine trefoil inoculum and uses twice the usual quantity. It is a good idea to mix the inoculum with a little sugar, skim milk, or clay along with the necessary water to make it stick to the seed. The stand will be improved by pasturing lightly or clipping as soon as weeds or the companion crop starts to shade the young trefoil.

These and other helpful hints on growing trefoil appear in an Indiana leaflet, AY 49, Birdsfoot Trefoil, A Permanent Pasture Legume.

COASTAL BERMUDA OUTPERFORMS COMMON BERMUDA

Coastal Bermuda is a high-yielding hybrid grass developed at the USDA Experiment Station at Tifton, Ga. As compared with common Bermuda it yields more, is more resistant to disease and drought, has a longer growing season, and produces a better hay crop. Coastal Bermuda is adapted to the same areas as common Bermuda.

This new variety responds well to high fertility, requiring nitrogen particularly for heavy yields. Astonishing increases

have been reported from nitrogen applications ranging up to 400 pounds per acre.

As Coastal Bermuda rarely produces viable seed, sprigging, using short lengths of the stolons, is the ordinary means of establishing stands. As for companion crops, the reseeding type of crimson clover has been found to be good. The clover furnishes early-season grazing, and the Coastal Bermuda provides grazing in summer and fall.

STATEWIDE COASTAL BERMUDA SEED-STOCK PROGRAM

To hasten the use of Coastal Bermuda-grass in South Carolina, a certified nursery patch has been established in each county under the charge of the county agent. In this way farmers can get stocks most readily for sprigging their pastures.

ABC'S OF GRASSLAND FARMING

High quality pasture, hay, and silage, plus good cattle and management, are the building stones for low-cost production in the view of Wisconsin specialists, who have neatly "packaged" their grassland farming recommendations.

Good pastures are the first aim and are defined as any mixture of immature grasses or legumes growing in such abundance that a cow can graze her fill in an hour's time, then lie down and convert this quality pasture to milk or meat.

The sort of hay these men have in mind to supplement pasture is characterized by a good crop to start with; high protein and low fiber content; bright green color; appetizing smell; absence of molds, dusts, weeds, and trash; and low lignin content. It is of utmost importance that the hay still have a high percentage of its leaves intact

when fed; for example, alfalfa leaves will contain 65 to 70 percent of the protein and net energy. Green color is important as it indicates carotene content.

Grass silage has served so well the role of "canned" pasture that production in Wisconsin skyrocketed from 2,000 acres in 1945 to approximately 200,000 acres in 1952. The Wisconsin agronomists report that a lot of high quality feed was preserved as grass silage during that time and yet, as in any new practice, there has been much to learn by trial and error.

They find that poor silage has usually resulted from two causes--either the crop was too dry or was chopped so long and packed so loosely that molds resulted, or else the crop was ensiled too wet. In this case, the silage had a putrid odor due to butyric acid formation, a condition associated with moisture content above 75 percent. The trend toward earlier cutting to get higher quality contributes to high moisture, as does the direct-cut method of harvesting silage crops. Aside from care in harvesting, other suggested means of combating this problem include provisions for drainage from the bottom of the silo and the use of preservatives.

JUNIOR EXHIBITS STIR INTEREST IN COLORADO

In Colorado, the State Pure Seed Show, the Colorado section of the American Society of Range Management, and Local conservation districts, in conjunction with vocational agriculture teachers and county agents, are encouraging the study of grass, forage plants, and range resources among 4-H and FFA members. Ribbons are awarded for grass boards exhibited at local fairs throughout the State. The best of these in turn are exhibited at the Colorado Pure Seed Show held annually in connection with the National Western Stock Show in Denver. The contest is open to any 4-H and FFA member, club, or chapter in the State. The object is to stimulate interest in grass and to give these young people in educational experience in grass and forage plant identification, adaptation, and use.

The exhibits are judged on the basis of 30 percent for arrangement, display value, and neatness; 30 percent for completeness and accuracy; and 40 percent for educational value.

These exhibits are creating greater interest in grass, forage, and range among many

other people viewing the exhibits as well as the young people.

SAGEBRUSH CONTROL IMPROVES RANGELAND

Research at the Wyoming Experiment Station shows that cattle get more good grazing from rangeland when three-fourths or more of the big sagebrush has been killed by chemicals. Not only are yields increased 100 to 200 percent, but livestock use the improved range more efficiently, beginning the year chemicals are applied. On test areas, production increased from 480 pounds of grass per acre on untreated sagebrush land to 1,335 pounds per acre where 90 percent of the sagebrush was controlled. In addition, use of the forage rose 20 percent.

SIXTY CENTS OF EVERY DOLLAR

Kansas agronomists are sparking their drive for grassland improvement among dairymen by centering attention on the point that 60 cents of every dollar spent for producing milk represents the cost of feed. They believe that the surest way to reduce this cost is the ample provision of good pasture, hay, and grass silage. Recognizing the interdependence of good pasture practices, they emphasize three essential steps: (1) Adding lime and fertilizer to build thick stands; (2) using adapted grass-legume mixtures; and (3) practicing good grazing management that allows the pasture plants a comeback opportunity, rather than skinning off all the topgrowth.

RESULTS FROM LIME

Quick results from liming material depends on several factors, and fineness is probably the most important one, say Nebraska agronomists. The finer the lime the quicker it gets results. The 50-mesh material usually starts to work within a few days if enough lime is applied and it is worked well into the ground. Sugar-factory lime, being fine, has given good results when applied in sufficient quantity to neutralize the soil, only a week or two before alfalfa is seeded. In contrast, insufficient applications or coarse lime may not benefit the legume for a year or longer.

SWEETCLOVER IS DROUGHT TOLERANT

Agronomists at the Arkansas Experiment Station have found that sweetclover has the

ability to withstand severe dry weather. This was first observed in 1952 when a variety test of red and other clovers was largely destroyed by extremely dry weather. Several varieties of sweetclover held their own when other forages were killed. The plantings were repeated in 1953 and 1954, even more severe drought years, and again the sweetclover prospered, especially the Spanish, Wisconsin, A-46, and Evergreen varieties. This unusual drought resistance is largely due to the rapid development of a deep, sturdy root system soon after establishment.

BAHIA GRASS

Argentine Bahia (*Paspalum notatum* Flugge) which was introduced into Florida in 1945, is a semierect type of grass, with pubescent leaves, the seed heads having the two-pronged panicle characteristic of Bahia.

Plantings have been made on a wide selection of soils ranging from high, dry sands to low, wet soils subject to flooding. Seedings at the rate of 2 to 4 pounds per acre, with the seed covered to a depth of 1/2 to 1 inch, have germinated in 2 weeks and made full sod cover in 10 weeks. With rough seedbeds a higher seeding rate is recommended to get a good stand.

Experiments conducted by the Florida Experiment Station, the Soil Conservation Service, and numerous farmers, show that Argentine Bahia is palatable, readily accepted by cattle, and fills a long-felt need for a grass to fit into grassland farming in the Southeast.

Two other strains (Pensacola and common Bahia) are also proving very satisfactory.

TIME TO TREAT HARDWOODS

Winter, late spring, and summer are the best seasons for treating unwanted hardwood trees, say range specialists in Texas. Both ammate and 2,4,5-T are recommended. The latter, dissolved in diesel oil or kerosene, is usually cheaper and more effective. These chemicals are applied with a hand type or back type sprayer to the tree stump, trunk, or in frills.

In Texas, the frill treatment has given the best results any time during the year if well done. It is important that the overlapping axe cuts completely encircle the tree and the chemical be thoroughly applied.

PASTURE WEED CONTROL

Each year weeds are robbing Nebraska farmers of one-third to one-half of the forage that their pastures are capable of producing. Tough, hard-to-eradicate pasture weeds have been utilizing the moisture and nutrients that might otherwise have gone into the production of desirable forage plants. Mowing, long the standard tool for controlling weeds in pastures, is being relied on less and less. Weed-control specialists at the Nebraska station have found that the use of selective herbicides together with controlled grazing is the surest way of eliminating the weed problem in pastures containing no legumes. The application of 1 pound per acre of the ester of 2,4-D in water on June 15 in each of 3 successive years gave 75- to 80-percent control of such perennial weeds as ironweed and hoary vervain. When correlated with proper seasonal use, the spraying treatment resulted in a 75- to 90-percent increase in the production of forage from desirable pasture grasses.

POTOMAC ORCHARDGRASS

Potomac is a new variety of orchardgrass recently developed by the USDA in conjunction with State experiment stations. Its chief advantages are rust resistance and increased leafiness. Once the seed increase program now under way permits, it is believed that Potomac orchardgrass will be most useful throughout the main orchardgrass region extending from southern Pennsylvania through North Carolina westward into the Middle West.

BETTER PASTURES AND RANGES FOR THE WEST

Research now under way, designed to help ranchers improve their pastures and ranges in the arid and subhumid regions of the West, from New Mexico to North Dakota, will devote major attention to investigations of range reseeding, fertilization, and management. These studies, formerly conducted by the Forest Service, became the responsibility of the Agricultural Research Service as a result of the recent USDA reorganization.

Dr. R. E. Wagner, of the Field Crops Research Branch, ARS, is leader of the project, with headquarters at the Department's Plant Industry Station, Beltsville,

Md. A. C. Hull, formerly of the Forest Service, has been appointed ARS regional coordinator of the range reseeding and fertilization phases, with headquarters at the Utah Agricultural Experiment Station.

All USDA grazing management research in the Great Plains area and in the Jornada Experimental Range, Las Cruces, N. Mex., is included in the new project. The Great Plains work is centered at Woodward, Okla.; Nunn, Colo.; Miles City, Mont.; and Mandan, N. DAK.

E. H. McIlvain has recently been appointed superintendent of the Southern Great Plains Field Station at Woodward, Okla., succeeding D. A. Savage, deceased. M. A. Hein, with headquarters at Beltsville, Md., continues as project leader for pasture and range research in the humid region.

RYE WINTER PASTURE

A growing appreciation of rye for winter pasture and drought-born feed shortages are responsible for the fact that the rye acreage sown in the fall of 1954 is the largest in 12 years. The estimated 5,052,000 acres sown is one-fourth more than the 4,023,000 acres seeded in the fall of 1953, and nearly one-third more than the 10-year average of 3,831,000 acres. This is the second year in which rye acreage has shown a sharp increase.

OREGON LAUNCHES EXTENSIVE GRAZING TRIALS

Through 75 long-term field trials in 17 counties of eastern Oregon, the Experiment Station and Extension Service are cooperating in a search for hardy legumes that will stem the decline in production of rangelands of the area. The problem has been described as follows:

The original cover is being replaced by species of little forage value; annuals are

replacing perennials; organic matter has declined and erosion increased. Nitrogen applications give significant increases, but on most of these lands the limited production scarcely justifies the cost. The solution seems to rest on finding a legume that will persist under grazing in an arid climate.

With the idea of thoroughly testing the alfalfas, large-scale seedings, generally of 20 to 60 acres, have been made at elevations ranging from 1,000 to 6,000 feet, in rainfall belts ranging from 8 to 20 inches. These plantings have been financed quite largely by ranchers who are eager to do so. A number of types and varieties of alfalfa are included in combination seedings with several grasses.

These fields will be grazed and notes on stand, vigor, native vegetation, and other pertinent facts will be taken at intervals for 10 years on all fields justifying it. There will be no attempt to measure yields because survival is considered the point of chief concern.

WINTER PASTURE PRODUCES TOP LAMBS

Feeding tests in Georgia show that lambs carried on a well-managed grazing system make just as much average daily gain as those given creep feeding in addition to grazing. Nor did supplemental feeding of the mother ewes make any real difference in the rate of gain.

All the test lambs sold for 26 cents a pound at Prime and Choice grades in the spring of 1954. Their average weight was 90 pounds and their average age 127 days. They were offspring of upgraded native ewes bred to purebred Hampshire rams.

Pastures were of rye; ryegrass and crimson clover; and oats, ryegrass, and crimson clover grown on limed and fertilized land.

GRASSLAND PUBLICATIONS (Copies available from issuing agency. Please do not write to us for copies.)

Illinois Extension Service, Cir. 721, Limestone, How To Use It, When To Use It, Where To Use It.

Cir. 725, Growing Birdsfoot Trefoil in Illinois.

Cir. 727, Growing Red Clover in Illinois.

Indiana Extension Service, Mimeo. AY 49, Birdsfoot Trefoil, A Permanent Pasture Legume.

Nebraska Experiment Station, Cir. 93, 50 Years of Research at the North Platte Experiment Station.

New Jersey Extension Service, Bull. 271, Band Seed for Better Forage Stand.

Texas Extension Service, Cir. C-330, More Grass From Controlling Hardwoods.

Leaflet L-127, Chemical Control of Mesquite.

Bull. 786, Relation of Soils, Rainfall and Grazing Management to Vegetation.

Texas Experiment Station, Progress Report 1739, Wheat Pasture Poisoning in Cattle.

Wisconsin Extension Service, Cir. 477, Sweet Clover in Wisconsin.

USDA Publications:

Leaflet L-343, Corrugation Irrigation.

Leaflet L-373, Lespedezas for Quail and Good Land Use.

Please do not write to us for copies of publications. Write to issuing agency.

Items or publications for Grassland Progress should be addressed to J. R. Paulling, Federal Extension Service, United States Department of Agriculture, Washington 25, D. C.